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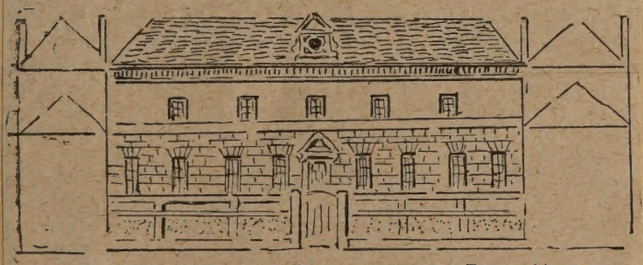
Marcelin Berthelot, 1827-1907

A Centenary Note

By Our Paris Correspondent

PIERRE EUGÈNE MARCELIN BERTHELOT was born at Paris on October 25, 1827, and was the son of a medical man. He passed his school days at the Lycée Henri IV, close to the Panthéon. At the age of nineteen he first distinguished himself by taking the "prix d'honneur" at the "Concours Général," an annual competitive examination open to pupils of the lycées (high schools). He studied science merely "on his own," but with such excellent results that, when he entered Balard's laboratory at the College of France, four or five years later, the discoverer of bromine did not hesitate to predict a brilliant future career for his young assistant. Berthelot must have commenced those epoch-marking experiments which resulted in the foundation of synthetic chemistry very shortly after his arrival at the college. He appears first to have produced formic acid by synthesis, and to have followed this up by the study of carbides and the production of artificial alcohol. In 1854 he took his degree as Doctor of Science, presenting a thesis on "The Combination of Glycerin with Acids and the Synthesis of Animal Fat." His work began to attract the attention of the world of science; in 1855 he became a member of the Society of Biology, and a member of the Chemical Society in 1858. In 1859 a new and special chair of organic chemistry was founded at the Paris Superior School of Pharmacy, and on December 2, the anniversary of the Empire, Napoleon III signed the decree, still preserved in the school archives, nominating Berthelot titular professor at the age of thirty-two; he held the post for seventeen years. In 1860 appeared his great work, "Organic Chemistry founded on Synthesis," which ran through eight editions, and in the following



THE OLD PARIS SCHOOL OF PHARMACY IN THE RUE D'ARBALETE

year the Academy of Sciences awarded him the Jecker Prize for "the artificial production of various chemical substances by synthesis." Six future professors of the Paris School of Pharmacy were among his pupils: Henri Moissan, Bourgoin, Bouchardot, Jungfleisch, Prunier and Villiers. Another dozen or more accepted provincial chairs, of whom the best known is perhaps M. Paul Sabatier, the 1912 Nobel prizeman. Berthelot did not shine as an orator in the lecture halls, but took pleasure and pride in inspiring this future generation of teachers and workers "to carry on when we are gone," as he once said to me.

Not long after came the Franco-German War and the fall of the Empire. Berthelot was in Paris during the siege of 1870-71, acting as president of the Committee of Scientific Defence and studying explosives. His patriotic energy did not pass unnoticed by the general public; for when an armistice was granted to enable France to elect a National Assembly to settle terms of peace, 30,000 Parisians voted in favour of Berthelot. But he had never consented to stand as a candidate for parliamentary honours, and persisted in his refusal. He contented himself for a time with purely scientific work. In 1871 he published a remarkable work on explosives, and later sat on committees connected with this subject. He mentioned to me that M. Vièille, the inventor of smokeless powder, was his ex-pupil and his colleague on this official board. In 1873 Berthelot was elected a member of the Academy of Sciences; three years later he relinquished his post at the School of Pharmacy, and eventually he was nominated a senator for life, though he practically never spoke in the Upper House except on questions of education.

I met him some twenty years later. He was then an ex-minister of state, full of years and honours. Perpetual secretary of the Academy of Sciences, and regularly present at the Monday afternoon meetings of that learned body, I had the chance to see him from time to time—I can hardly say to hear him, for his subdued tones barely reached the reporters' bench. But one day I managed to meet him at the Station of Vegetable Chemistry, a pleasant place in the Meudon hills, just outside Paris. Chatty, frank, simple and unassuming, he put one instantly at ease. He confided to me, as we strolled along the garden paths, his ambition to fathom the chemical secrets of plant life that mankind might work on nature's methods in this direction as in that of chemical synthesis. No less interesting was our chat in the library, where he spoke of his latest book on the "Study of Chemistry in Ancient Times," and showed me the illustrations of ancient apparatus for which he had ransacked the British Museum and Cambridge University libraries, as well as similar Continental institutions. Apart from his scientific studies, as wide as they were profound, and his public services in connection with education, Berthelot's private life was such as to command universal respect. His four sons have led useful lives of public service; the youngest, Daniel, was, until his recent death, professor at the Paris Faculty of Pharmacy.

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